

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY


(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

REC'D 14 MAR 2006

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Applicant's or agent's file reference 64030A		FOR FURTHER ACTION		See Form PCT/IPEA/416
International application No. PCT/US2004/043335		International filing date (day/month/year) 24.12.2004		Priority date (day/month/year) 24.12.2003
International Patent Classification (IPC) or national classification and IPC C08L101/00, C08K5/3435, C08K5/34, C08L23/08				
Applicant DOW GLOBAL TECHNOLOGIES INC et al.				
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 9 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input type="checkbox"/> sent to the applicant and to the International Bureau a total of sheets, as follows:</p> <p><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>				
<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the opinion</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input checked="" type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input checked="" type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input checked="" type="checkbox"/> Box No. VIII Certain observations on the international application</p>				
Date of submission of the demand 22.07.2005		Date of completion of this report 15.03.2006		
Name and mailing address of the international preliminary examining authority:  European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016		Authorized Officer Bergmans, K Telephone No. +31 70 340-		



**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/US2004/043335

Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4)
 - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

Description, Pages

1-25 as originally filed

Claims, Numbers

1-20 as originally filed

Drawings, Sheets

1-2 as originally filed

☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/figs
- ☐ the sequence listing (*specify*):
- ☐ any table(s) related to sequence listing (*specify*):

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/figs
- ☐ the sequence listing (*specify*):
- ☐ any table(s) related to sequence listing (*specify*):

* If item 4 applies, some or all of these sheets may be marked "superseded."

**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/US2004/043335

Box No. IV Lack of unity of invention

1. ☒ In response to the invitation to restrict or pay additional fees, the applicant has:
- ☐ restricted the claims.
 - ☐ paid additional fees.
 - ☐ paid additional fees under protest.
 - ☒ neither restricted nor paid additional fees.
2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.
3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is
- ☐ complied with.
 - ☒ not complied with for the following reasons:
see separate sheet
4. Consequently, this report has been established in respect of the following parts of the international application:
- ☐ all parts.
 - ☒ the parts relating to claims Nos. 1-10,12,13,15-20 .

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	
	No: Claims	1-10,12,13,15-20
Inventive step (IS)	Yes: Claims	
	No: Claims	1-10,12,13,15-20
Industrial applicability (IA)	Yes: Claims	1-10,12,13,15-20
	No: Claims	

2. Citations and explanations (Rule 70.7):

see separate sheet

Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

see separate sheet

**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/US2004/043335

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

Re Item IV

Lack of unity of invention

The Examining Division found that the application lacks unity within the meaning of Rule 13.1 PCT, because the following separate inventions or groups of inventions are not so linked as to form a single general inventive concept:

The common concept between claim 1 and the rest of the independent claims is a crosslinkable expandable polymeric composition comprising a free radical crosslinkable polymer, free radical inducing species, a crosslinking profile modifier, and a blowing agent.

Document D1 (EP1264857) discloses a curable composition comprising a crosslinkable polymer, free radical inducing species, a crosslinking profile modifier and a foaming agent.

All the technical features of the common concept as indicated above are known from document D1. Therefore, the application lacks unity of invention within the meaning of Rule 13(1) PCT. The especial technical features according to rule 13 (2) PCT which provide a contribution over the prior art are not so linked to form a unitary inventive concept.

Claim 1 defines a crosslinkable expandable polymeric composition comprising a free radical crosslinkable polymer, low temperature free radical inducing species, a crosslinking profile modifier, and a blowing agent.

Claim 8 defines a crosslinked expanded article made out of the crosslinkable expandable polymeric composition disclosed in claim 1.

Claim 11 defines a crosslinkable expandable polymeric composition comprising a free radical crosslinkable polymer, short-half-life free radical inducing species, a crosslinking profile modifier, and a blowing agent.

Claim 12 defines a process for preparing a crosslinked expanded article using melt processing steps of the crosslinkable expandable polymeric composition disclosed in claim 1.

Claim 14 defines a process for preparing a crosslinked expanded article using melt processing steps of the crosslinkable expandable polymeric composition disclosed in claim 11.

Claim 18 defines a crosslinked expanded article prepared by the process disclosed in claim 12.

Claim 18 defines a crosslinked expanded article prepared by the process disclosed in claim 14.

Therefore the different inventions lead to different results. Consequently, the present set of claims breaks up in seven inventions as follows:

Claims 1-7 : A crosslinkable expandable polymeric composition comprising a free radical crosslinkable polymer, low temperature free radical inducing species, a crosslinking profile modifier, and a blowing agent. The composition can contain optionally a cure booster.

Claims 8-10 : A crosslinked expanded article made out of the crosslinkable expandable polymeric composition disclosed in claim 1.

Claim 11 : A crosslinkable expandable polymeric composition comprising a free radical crosslinkable polymer, short-half-life free radical inducing species, a crosslinking profile modifier, and a blowing agent.

Claims 12,13,15-17 : A process for preparing a crosslinked expanded article using melt processing steps of the crosslinkable expandable polymeric composition disclosed in claim 1.

Claims 14-17 : A process for preparing a crosslinked expanded article using melt processing steps of the crosslinkable expandable polymeric composition disclosed in claim 11.

Claims 18-20 : a crosslinked expanded article prepared by the process disclosed in claim 12.

**INTERNATIONAL PRELIMINARY
REPORT ON PATENTABILITY
(SEPARATE SHEET)**

International application No.

PCT/US2004/043335

Claims 18-20 : a crosslinked expanded article prepared by the process disclosed in claim 14.

There are seven independent claims each one containing especial technical feature not linked by a common concept. Therefore, seven different inventions can be identified. However, the examiner has grouped said seven inventions in only two for the benefit of the applicant according to the following :

Claims 1-10,12,13,15-20(part) : A crosslinkable expandable polymeric composition comprising a free radical crosslinkable polymer, low temperature free radical inducing species, a crosslinking profile modifier, and a blowing agent. A crosslinked expanded article made out of the crosslinkable expandable polymeric composition and a process for preparing a crosslinked expanded article.

Claims 11,14,15-20(part) : A crosslinkable expandable polymeric composition comprising a free radical crosslinkable polymer, short-half-life free radical inducing species, a crosslinking profile modifier, and a blowing agent. A crosslinked expanded article made out of the crosslinkable expandable polymeric composition and a process for preparing a crosslinked expanded article.

The applicant is asked to state upon which invention further prosecution of this application should be based and to limit the application accordingly.

Re Item V

Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

Reference is made to the following documents:

D1: EP1364857

Novelty (Art. 33 (2) PCT)

The document D1 discloses a curable composition comprising a crosslinkable polymer, free radical inducing species, a crosslinking profile modifier and a foaming agent. The free radical inducing species is e.g. tert.peroxybenzoate and the crosslinking profile modifier is e.g. 2,5 dimethyl-2,5-di(t-butylperoxy)-3-hexyne (4OH-TEMPO).

The subject matter of claims 1-10,12,13,15-20 over D1 is considered to be not novel (Art. 33(2) PCT).

Inventive step (Art. 33(3) PCT)

All the technical features of the present claims are described in D1. Therefore the claims 1-10,12,13,15-20 do not involve an inventive step (Art. 33(3) PCT).

Re Item VII

Certain defects in the international application

Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in document D1 is not mentioned in the description, nor is this document identified therein.

Re Item VIII

Certain observations on the international application

Clarity (Art. 6 PCT)

1. The claims 3-7, and 13 do not meet the requirements of Article 6 PCT in that the matter for which protection is sought is not clearly defined. The claims attempt to define the subject-matter in terms of the result to be achieved, which merely amounts to a statement of the underlying problem, without providing the technical features necessary for achieving this result.

**INTERNATIONAL PRELIMINARY
REPORT ON PATENTABILITY
(SEPARATE SHEET)**

International application No.

PCT/US2004/043335

2. Claims 8-10 and 18-20 do not meet the requirements of article 6 in that matter for which protection is sought is not clearly defined. The claims attempt to define a "product by its process". Claims for products defined in terms of a process are admissible only if the products as such fulfill the requirements for patentability and if they cannot be defined otherwise.